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CANCER AND LOW DOSE RESPONSES IN VIVO: IMPLICATIONS FOR RADIATION PROTECTION

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The Linear No Threshold (LNT) hypothesis states that ionizing radiation risk is directly proportional to dose, without a threshold. This hypothesis, along with a number of additional derived or auxiliary concepts such as dose additivity, radiation and tissue type weighting factors, and dose rate reduction factors, are used to calculate radiation risk estimates for humans, and are therefore fundamental for radiation protection practices. This system is based mainly on epidemiological data of cancer risk in human populations exposed to relatively high doses (above 100 mSv), with the results linearly extrapolated back to the low doses typical of current exposures. The system therefore uses dose as a surrogate for risk. There is now a large body of information indicating that, at low doses, the LNT hypothesis, along with most of the derived and auxiliary concepts, is incorrect. The use of dose as a predictor of risk needs to be re-examined and the use of dose limits, as a means of limiting risk needs to be re-evaluated. This re-evaluation could lead to large changes in radiation protection practices.

Date: **Wednesday**, September 26, 2007
Time: 7:00 p.m.
Location Air Force Mess (3rd floor)
158 Gloucester St. (between Bank and O'Connor)

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